

NEONATAL ABSTINENCE SCORING SYSTEM

The NAS score sheet lists 21 symptoms that are most frequently observed in opiate-exposed infants. Each symptom and its associated degree of severity are assigned a score and the total abstinence score is determined by totaling the score assigned to each symptom over the scoring period.

Key Points

- The first abstinence score should be recorded approximately two hours after birth or admission to the nursery (baseline score). This score reflects all infant behavior up to the first scoring interval time point.
- Following the baseline score all infants should be scored at 3-4 hour intervals, except when high scores indicate more frequent scoring.
- Scoring is dynamic. All signs and symptoms observed during the scoring interval are included in the point-total for that period.
- If pharmacotherapy is not needed the infant is scored for the first 4 days of life at 3-4 hour intervals.
- If pharmacotherapy is required the infant is scored at 3- 4-hour intervals, depending on whether the abstinence score is less than or greater than 8 throughout the duration of therapeutic period.
- Consider pharmacological treatment:
 - If 3 Consecutive scores &/or their average is 9-14
 - If scores greater than 14
- Morphine dosing: 0.05mg/kg q 3 hour. Dose may be individualized for over sedation or increased to capture withdrawal symptoms. Weaning dosing- decrease by 10% of original dose daily as scores allow.
- If after cessation of pharmacotherapy the score is less than 8 for the following 3 days, then scoring may be discontinued.
- If after cessation of pharmacotherapy the score is consistently 8 or more, then scoring should be continued for the following 4 days (minimum) to ensure that the infant is not likely to develop late onset of withdrawal symptoms at home following discharge.

Guide to assessment and scoring

The neonatal abstinence syndrome scoring system was designed for term babies on 3-4-hour feeds and may therefore need modification for preterm infants.

High-pitched cry- Unable to decrease crying w/in 15 seconds of self-consoling measures or caregivers interventions <ul style="list-style-type: none"> - Excessive high-pitched - Continuous high-pitched - Score if cry is high pitched or not 	<u>Score 2-</u> if high-pitched up to 5 minutes <u>Score 3-</u> if high-pitched for greater than 5 minutes
Sleep- increasing severity, should receive only one score from the 3 levels of severity. -do not score if infant does not awaken spontaneously -if awakened for meds or feeding at a 3 hour interval, do not score for "less than 3 hours" of sleeping	<u>Score 1-</u> if baby sleeps less than 2 hours <u>Score 2 -</u> if less than 1 hour <u>Score 3-</u> if baby does not sleep between feeds.
Moro reflex- prior to eliciting this reflex, quiet if irritable or crying to ensure jitteriness is from withdrawal rather than agitation -Jittery- symmetric & involuntary rhythmic tremors -clonus-involuntary repetitive jerks (out/in movements) of wrists or ankle	<u>Score 2-</u> if pronounced jitteriness of hands during or at end of Moro reflex or if the infant exhibits pronounced jitteriness (rhythmic tremors that are symmetrical and involuntary) of the hands during or at the end of a Moro reflex. <u>Score 3-</u> if jitteriness and clonus (repetitive involuntary jerks) of the hand and/or arms are present during or after the initiation of the reflex.
Tremors- involuntary rhythmic movements/quivers with equal amplitude occurring at a fixed point.	<u>Score 1-</u> tremors of hand or foot when infant is being handled <u>Score 2-</u> tremors of one or both arms or legs with or without tremors of hands or feet in any sleep/wake state <u>Score 3-</u> Tremors of hands or feet when not being handled or 15-30 seconds after being handled <u>Score 4-</u> Tremors of one or both arms or legs with or without tremors of hands or feet when not being handled or 15-30 seconds after being handled
Increased muscle tone- the ability of a muscle to resist movement -"pull-to-sit" - do not assess tone when asleep or crying -wake &/or comfort a crying infant prior to testing	<u>Score 2-</u> if no head lag noted with total body rigidity seen (like a board)
Excoriation –abrasion resulting from constant rubbing extremity against a flat surface -Continue to score until rub marks are no longer present	<u>Score 1-</u> if present on chin, knees, cheeks, elbows, toes or nose (not diaper area)

<p>Myoclonic jerks –involuntary spasms or twitching of a muscle (usually involving a single muscle group) -These jerks differ from tremors by being short quick contractions of muscles in extremities</p>	<p><u>Score 3</u>- if twitching movements of facial muscles or extremities or jerking movements of arms or legs</p>
<p>Generalized Seizures – tonic seizures consisting of generalized activity involving tonic extensions of all limbs (often associated with apnea) and clonic (alternating muscle contraction/relaxation) movements. -if movement stops with touching or flexing of involved limb, it is not seizure activity.</p>	<p><u>Score 5</u>- if infant has generalized seizures, often referred to as tonic seizures. -generalized activity involving tonic extensions of all limbs, but are sometimes limited to one or both limbs on one side. Unusual limb movements may accompany a seizure. -upper limbs- resemble “swimming” or “rowing”. -lower limbs- resemble “pedaling” or “bicycling”. -subtle signs may include eye staring, rapid involuntary movements of the eyes, chewing, back arching, and fist clenching.</p>
<p>Fever- use axillary route -fever is an early indication of heat produced by increased muscle tone and tremors</p>	<p><u>Score 1</u>- if temperature 99-100.8° F.(37.2-38.3° C) <u>Score 2</u>- if temperature > 101° F. (>38.4°C)</p>
<p>Sweating -spontaneous, not due to excessive clothing or high room temperature</p>	<p><u>Score 1</u>- if wetness of forehead, upper lip or back of neck</p>
<p>Yawning</p>	<p><u>Score 1</u>- if more than 3 yawns observed within the scoring interval.</p>
<p>Mottling – marbled appearance of pink & pale or white areas</p>	<p><u>Score 1</u>- if present on the infant’s chest, trunk, arms, or legs.</p>
<p>Nasal stuffiness- may have runny nose</p>	<p><u>Score 1</u>-if the infant sounds congested; mucous may be visible.</p>
<p>Sneezing</p>	<p><u>Score 1</u>- if more than 3 sneezes observed with the scoring interval.</p>
<p>Nasal flaring- repeated dilation of the nostrils</p>	<p><u>Score 2</u>- only if repeated dilation of the nostrils is observed without other evidence of lung or airways disease.</p>
<p>Respiratory rate – count for one full minute</p>	<p><u>Score 1</u>- if respirations > 60 per minute without retractions. <u>Score 2</u>- if respirations > 60 per minute with retractions.</p>
<p>Excessive sucking – increased rooting with rapid swiping movements of hand across mouth in attempt to suck on fist, hands or pacifier prior to or after feeding. -attempts to suck on pacifier while moving head from side to side, unable to adequately suck on pacifier</p>	<p><u>Score 1</u>- if hyperactive/disorganized sucking, increased rooting reflex, or attempts to suck fists or thumbs (more than that of an average hungry infant) are observed.</p>

Poor feeding-	<u>Score 2-</u> if the infant demonstrates excessive sucking prior to feeding, yet sucks infrequently during a feeding taking a small amount of breast milk or formula, and/or demonstrates an uncoordinated sucking reflex (difficulty sucking and swallowing). -- Premature infants may require tube feeding and should not be scored for poor feeding if tube feeding is expected at their gestation.
Regurgitation- effortless return of gastric or esophageal contents from infant's mouth; not associated with burping	<u>Score 2-</u> regurgitation is observed not associated with burping occurring 2 or more times during a feeding.
Projectile vomiting- forceful ejection of stomach contents from the infant's mouth	<u>Score 3-</u> one or more projectile vomiting episodes during or immediately after a feeding.
Loose / watery stools- red buttocks may or may not be present	<u>Score 2-</u> if loose (curds, mushy or seedy appearance) May or may not be explosive, more liquid than a normal stool <u>Score 3-</u> watery stools (water ring on diaper around stool) are observed.

References:

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